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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,645	01/26/2004	Ernest E. Marinero	HSJ9-2003-0229US1	1184
44425	7590	04/17/2006	EXAMINER	
THOMAS R. BERTHOLD 18938 CONGRESS JUNCTION COURT SARATOGA, CA 95070			RICKMAN, HOLLY C	
			ART UNIT	PAPER NUMBER

1773

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/765,645

Applicant(s)

MARINERO ET AL.

Examiner

Holly Rickman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/26/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-15 in the reply filed on 2/8/06 is acknowledged.

Claim Interpretation

2. The examiner notes that the term "substantially" in the limitation "substantially between 0.1 nm and 10 nm" in claim 10 has been interpreted to mean "approximately." That is, the value is approximately 0.1 nm to approximately 10 nm or any value in between. If Applicant disagrees with this interpretation, it is requested that the record be clarified.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 is rendered indefinite by the phrase "substantially greater than 3 nm." The term "substantially" in combination with the definite phrase "greater than 3 nm" renders the scope of the claim indefinite. Does the term "substantially" mean that the value is "much" greater than 3 nm? Does it mean that the value must be approximately 3 nm or greater in which case? The

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examiner recommends that the term “substantially” be deleted in order to overcome this rejection.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 4-7, 10-12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Simion et al. (US 6185081).

Simion et al. disclose a magnetic sensor structure having multiple layers of Cr or CrV corresponding to the claimed underlayers alternating with multiple layers of a material such as MgO or NiAl (col. 4, lines 30-32; col. 5, lines 64-66; col. 7, lines 13-41 and col. 8, lines 9-10). The reference teaches that the thickness of the Cr or CrV layers may be between 1 and 3 nm (col. 7, lines 33-35).

7. Claims 1, 7-8, and 11-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Pinarbasi et al. (US 2003/0058586).

Pinarbasi et al. disclose a magnetic head having a hard magnetic biasing layer formed over a multi-layered structure corresponding to the claimed seed layer structure. Figure 4 shows

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a TaO layer (482) corresponding to the first interlayer, a gap layer (423) corresponding to the first underlayer, and a Cr layer (484) corresponding to the claimed second underlayer.

8. Claims 1-2, 4, and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Wu et al. (US 2006/0051623).

Wu et al. disclose a structure including multiple seedlayers and underlayers corresponding to the claimed underlayers and interlayers disposed beneath a hard magnetic layer (see Fig 2). The reference teaches that the thickness of two of said underlayers (corresponding to the first and second underlayers) are up to 40 Angstroms (4 nm) and 50 Angstroms (5 nm).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simion et al. (US 6185081).

Simion et al. disclose a magnetic sensor structure having multiple layers of Cr or CrV corresponding to the claimed underlayers alternating with multiple layers of a material such as MgO or NiAl (col. 4, lines 30-32; col. 5, lines 64-66; col. 7, lines 13-41 and col. 8, lines 9-10). The reference discloses an embodiment having two layers of Cr separated by a layer of NiAl but states that additional Cr-based layers and NiAl layers or the like can be formed on top of those

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layers specifically shown in Fig 8 (figure numbers 122, 125, 127, 130). Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to add additional alternating layers on top of the Cr/NiAl taught by Simion et al., in view of the disclosure by Simion et al. that it is within the purview of ordinary skill in the art to add such layers to the structure as exemplified in Fig. 8.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US 2006/0051623).

Wu et al. disclose a structure including multiple seedlayers and underlayers corresponding to the claimed underlayers and interlayers disposed beneath a hard magnetic layer (see Fig 2). The reference teaches that the substrate can be coated with a seedlayer materials selected from a group including Cr/NiNb corresponding to the claimed first underlayer and first interlayer. The reference also teaches forming an underlayer over this composite seedlayer selected from a group including Cr and TiCr. It would have been obvious to one of ordinary skill in the art at the time of invention to choose a Cr containing material such as Cr or TiCr for the underlayer in view of the functional equivalence of each of the disclosed underlayer materials. See paragraphs [0021]-[0023]. Substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. *In re Fount* 213 USPQ 532 (CCPA 1982); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *Grover Tank & Mfg. Co. Inc V. Linde Air Products Co.* 85 USPQ 328 (USSC 1950).

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Holly Rickman', with a stylized flourish at the end.

Holly Rickman
Primary Examiner
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